



AFCTN Test Report 94-057

AFCTB-ID
94-001



Technical Publication Transfer

Using:

O'Neil & Associates, Inc. Data

Supporting:

NTSC/OSMT Tech Manual

(Contract #N61339-92-C-0074)

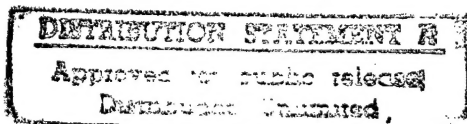
MIL-M-28001A (SGML)

MIL-R-28002A (Raster)

MIL-D-28003 (CGM)

Quick Short Test Report

31 January 1994



Prepared for
Electronic Systems Center
Det 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy, Suite 300
Dayton, Ohio 45431-1672

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Quick Short Test Report

31 January 1994

Prepared By

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Air Force CALS Test Bed

Notification of Test Results

31 January 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

O'Neil & Associates, Inc.

Identified as follows:

Title:	TM NTSC P-7061
Program:	U.S.Navy NTSC Program
Program Office:	Navy Training Systems Center (Code 41)
Contract No.:	N61339-92-C-0074
QSTR No.:	AFCTB-ID 94-001

Received on the following media: **9-Track Tape**

The results of the AFCTB Quick Short Test Report evaluation are as follows:

MIL-STD-1840A Media Format:	Pass
MIL-D-28000A IGES:	N/A
MIL-M-28001B SGML:	Pass
MIL-R-28002A Raster:	Pass
MIL-D-28003 CGM:	Pass

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed
HQ ESC/AV-2P
4027 Colonel Glenn Highway, Suite 300
Dayton, OH 45431-1672
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1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze O'Neil & Associate's interpretation and use of the CALS standards in transferring technical publication data. O'Neil used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 94-001

Date of
Evaluation: 31 January 1994

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data
Originator: O'Neil & Associates, Inc
Larry McKinley
425 North Findlay St.
Dayton OH 45404-2203
(513) 461-1602 x3008

Data
Description: Technical Manual Test
1 Document Declaration file
2 Document Type Definitions (DTD)
1 Text/Standard Generalized Markup Language
(SGML) file
1 Raster file
14 Computer Graphics Metafile (CGM) files

Data
Source System:

1840

HARDWARE

386 PC

SOFTWARE

Tapetool v1.2.10

Text/SGML

HARDWARE

386 PC

SOFTWARE

WordPerfect Inteltag 1.0
Exoterica Validator 1.1

Raster

HARDWARE

HP/Apollo 425T

SOFTWARE

Auto-trol Raster Converter

CGM

HARDWARE

HP/Apollo 425T

SOFTWARE

Auto-trol Series 5000/CGM Converter 1.4

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN Tapetools v1.2.10 UNIX

XSoft CAPS/CALS v40.4

MIL-M-28001 (SGML)

SUN SparcStation 2

ArborText ADEPT v4.2.1

PC 486/50

Exoterica XGMLNormalizer v1.2e3.2

Exoterica Validator v2.0 ex1

McAfee & McAdam Sema Mark-it v2.3

Public Domain sgmls

MIL-R-28002 (Raster)

SUN SparcStation 2

Carberry CADLeaf Plus v3.1

AFCTN validg4

IGES Data Analysis (IDA) IGESView v3.0

Island Graphics IslandPaint v3.0

SGI Indigo2

AFCTN xrastb.sgi

PC 486/50

IDA IGESView Windows

Inset Systems HiJaak Window Pro

Expert Graphics RxHighlight v1.0

MIL-D-28003 (CGM)

SUN SparcStation 2

ArborText cgm2draw

Carberry CADLeaf Plus v3.1

Island Graphics IslandDraw v3.0

Island Graphics IslandDraw v4.0

PC 486/50

Advanced Technology Center
(ATC) *MetaCheck R 2.10*
Software Publishing Corporation
(SPC) *Harvard Graphics v3.05*
Inset Systems *HiJaak Pro*
Lotus *Freelance v2.01*
Micrografx Designer v4.0
Corel *Ventura Publisher*

Standards

Tested:

MIL-STD-1840A
MIL-M-28001A
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The CALS coordinator from O'Neil & Associates personally delivered the tape to the Air Force CALS Test Bed (AFCTB) in a commercial mailing envelop. The exterior of the envelop was not marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was not enclosed in a barrier bag or barrier sheet material as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. A packing list showing all files recorded on the tape was not included.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool* v1.2.10 utility. No errors were encountered while evaluating the contents of the tape labels.

An attempt to read the tape using XSoft's *CAPS read1840A* utility resulted in a core dump on the system after ten files were extracted.

The physical structure of the tape meets the requirements defined in MIL-STD-1840A.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers. This portion of the tape meets the requirements defined in MIL-STD-1840A.

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included in this evaluation.

5. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or text files required by each system are not documented in the report.

The text and DTD files were evaluated using Exoterica's *Validator ex1* parser. No errors were reported but some warnings were issued. See the Appendix for this log file.

The text and DTD files from this document were tested using Exoterica's *XGMLNormalizer* parser. No errors were reported.

The text and DTD files from the tape were evaluated using McAfee & McAdam's *Sema Mark-it* parser.

The text and DTD files from the tape were evaluated using the Public Domain *sgmls* parser and no errors were reported.

The text file was imported into ArborText's *Adept* software and successfully published using a generic FOSI available within the AFCTB. No errors were reported. A copy of the title page is included in the Appendix to this report.

The SGML files meet the CALS MIL-M-28001A specification.

6. Raster Analysis

The tape contained one Raster file. This file was evaluated using the AFCTN *validg4* utility. This program reported that the file meets the CALS MIL-R-28002A specifications.

The file was read into the AFCTN *xrastb.sun4* viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *g42tiff* utility without a reported error. The resulting file was read into Island Graphics' *IslandPaint*, displayed and printed.

The Raster file was read into Carberry's *CADLeaf* software without a reported error and displayed.

The file was read into IDA's *IGESView* and *IGESView for Windows* without a reported error and displayed.

The file was read into Inset Systems' *HiJaak for Windows* and displayed without a reported error.

The Raster file was converted using Rosetta Technologies' *Prepare* without a reported error. The resulting file was read into Rosetta Technologies' *Preview* and displayed.

The Raster file was imported into Expert Graphics' *RxHighlight* and displayed without a reported error.

The Raster file meets the specification defined in CALS MIL-R-28002A.

7. CGM Analysis

The tape contained 14 CGM files. The files were evaluated using ATC's *MetaCheck* with CALS options. This utility reported that all files meet the specification defined in CALS MIL-D-28003.

The CGM files were evaluated using the beta AFCTN *validcgm* utility. This utility reported no errors in any of the submitted files.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings. Because all of the files were reported with no errors, only file D001C001 will be addressed in these comments. Each of the other files were viewed using at least one other software product.

The CGM files were converted using ArborText's *cgm2draw* utility without a reported error. The resulting files were read into Island Graphics' *IslandDraw* v3.1, displayed and printed.

The files were read into Carberry's *CADLeaf* software and displayed.

The files were read into Inset Systems' *HiJaak Pro* without a reported error.

The files were imported directly into Island Graphics' *IslandDraw* v4.0 without a reported error.

The files were imported into Lotus' *Freelance* without a reported error.

The files were imported into Micrografx's *Designer* without a reported error.

The files were imported into SPC's *Harvard Graphics* v3.05 without a reported error.

The files were imported into Corel's *Ventura Publisher* without a reported error.

The CGM files meet the specification defined in CALS MIL-D-28003.

8. Conclusions and Recommendations

The MIL-STD-1840A tape from O'Neil & Associates had no reported errors in the physical or CALS headers. This portion of the provided tape meets the requirements defined in CALS MIL-STD-1840A.

The DTDs and text files had no reported errors. However, two minor errors were uncovered during the publishing operation. The SGML files meet the specification defined in CALS MIL-M-28001A.

The one Raster file provided on the tape meets the specification defined in CALS MIL-R-28002A.

The 14 CGM files meet the specification defined in CALS MIL-D-28003.

The tape submitted by O'Neil and Associates, Inc, meets the requirements defined in CALS MIL-STD-1840A.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sat Jan 29 12:17:59 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set044

Page:
1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001C001	CGM	F/00080	00800/000073	Extracted
D001C002	CGM	F/00080	00800/000076	Extracted
D001C003	CGM	F/00080	00800/000068	Extracted
D001C004	CGM	F/00080	00800/000010	Extracted

<<<< PART OF LOG FILE REMOVED HERE >>>>

D001C013	CGM	F/00080	00800/000014	Extracted
D001C014	CGM	F/00080	00800/000019	Extracted
D001G015	DTD	D/00260	02048/000001	Extracted
D001G016	DTD	D/00260	02048/000017	Extracted
D001R017	Raster	F/00128	02048/000004	Extracted
D001T018	Text	D/00260	02048/000050	Extracted

Catalog Process terminated normally.

9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Sat Jan 29 12:17:34 1994

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ONA001

4

Label Identifier: VOL1
Volume Identifier: ONA001
Volume Accessibility:
Owner Identifier:
Label Standard Version: 4

HDR1D001 ONA00100010001000000 94021 00000 000000

Label Identifier: HDR1
File Identifier: D001
File Set Identifier: ONA001
File Section Number: 0001
File Sequence Number: 0001
Generation Number: 0000
Generation Version Number: 00
Creation Date: 94021
Expiration Date: 00000
File Accessibility:
Block Count: 000000
Implementation Identifier:

<<<< PART OF LOG FILE REMOVED HERE >>>>

End Of Tape File Set

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Sat Jan 29 12:18:00 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set044

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: DME Corporation (CAGE Code: 55827)

srcdocid: O'Neil & Assoc (CAGE 83007) H:\writing\dme\sgml\CH1-2-5.tgg

srcrelid: WordPerfect Intellitag

chglvl: ORIGINAL

dteisu: 19940113

dstsys: USN/NTSC/CALS

dstdocid: NTSC P-7061

dstrelid: NONE

dtetrm: 19940121

dlvacc: Contract No. N61339-92-C-0074

filcnt: C14,G2,R1,T1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: Technical Publication

docttl: OPERATN & MAINTNC GUIDE - OIL SYSTEM MAINTENANCE TRAINER - DEVICE
11H142

Found file: D001C001

Extracting CGM Header Records...

Evaluating CGM Header Records...

srcdocid: O'Neil & Assoc (CAGE 83007) H:\writing\dme\sgml\CH1-2-5.tgg

dstdocid: NTSC P-7061

txtfilid: W

figid: 1-0

srcgph: dme100.cgm

doccls: UNCLASSIFIED

notes: HP/Apollo 425T - Auto-trol Series 5000/CGM Converter 1.4

Saving CGM Header File: D001C001_HDR

Saving CGM Data File: D001C001_CGM

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Found file: D001C014
Extracting CGM Header Records...
Evaluating CGM Header Records...

srcdocid: O'Neil & Assoc (CAGE 83007) H:\writing\dme\sgml\CH1-2-5.tgg
dstdocid: NTSC P-7061
txtfilid: W
figid: 5-7
srcgph: dme113.cgm
doccls: UNCLASSIFIED
notes: HP/Apollo 425T - Auto-trol Series 5000/CGM Converter 1.4

Saving CGM Header File: D001C014_HDR
Saving CGM Data File: D001C014_CGM

Found file: D001G015
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: O'Neil & Assoc (CAGE 83007) H:\writing\dme\sgml\CH1-2-5.tgg
dstdocid: NTSC P-7061
notes: DME5.dtd

Saving DTD Header File: D001G015_HDR
Saving DTD Data File: D001G015_DTD

Found file: D001G016
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: O'Neil & Assoc (CAGE 83007) H:\writing\dme\sgml\CH1-2-5.tgg
dstdocid: NTSC P-7061
notes: M38784C

Saving DTD Header File: D001G016_HDR
Saving DTD Data File: D001G016_DTD

Found file: D001R017
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: O'Neil & Assoc (CAGE 83007) H:\writing\dme\sgml\CH1-2-5.tgg
dstdocid: NTSC P-7061
txtfilid: W

figid: NONE
srcgph: logo2.cal
doccls: unclassified
rtype: 1
rorient: 000,270
rpelcnt: 000612,000516
rdensty: 0300
notes: This is a CALS group4 header.

Saving Raster Header File: D001R017_HDR
Saving Raster Data File: D001R017_GR4

Found file: D001T018
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: O'Neil & Assoc (CAGE 83007) H:\writing\dme\sgml\CH1-2-5.tgg
dstdocid: NTSC P-7061
txtfilid: W
doccls: UNCLASSIFIED
notes: 386 PC - WordPerfect Intellitag 1.0 - Exoterica Validator 1.1

Saving Text Header File: D001T018_HDR
Saving Text Data File: D001T018_TXT

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

10. Appendix B - Detailed SGML Analysis

10.1 Exotercia Validator exl

```
<!-- **Warning** in "9401.sgm", line 392:
  A general entity name has been declared more than once.
  The entity is "disclos1".
  <!ENTITY disclos1 "Originator Supplies Appropriate Department or Agency Here
  ~~~~~~
-->
<!-- **Warning** in "9401.sgm", line 495:
  An element with mixed content should permit data characters ("#PCDATA") in
  all parts of its content model.
  The element being declared is "CALLOUT".
  <!ELEMENT callout      - -  (#PCDATA | graphic) >
                               /\
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA") in
  all parts of its content model.
  The element being declared is "ENTRY".
  dataiden  )+) | (warning?, caution?, note?) | (seqlist | randlist | deflist
               ^
-->
<!-- **Warning** in "9401.sgm", line 745:
  An element with mixed content should permit data characters ("#PCDATA") in
  all parts of its content model.
  The element being declared is "ITEM".
  <!ELEMENT item      - o  (%text;, (%list;)*, ftnote*) >
                               ^
-->
<!-- **Warning**:
  An element with mixed content should permit data characters ("#PCDATA") in
  all parts of its content model.
  The element being declared is "TERM".
  dataiden  )+), ftnote*)
               ^
-->
<!-- **Warning** in "9401.sgm", line 1078:
  An element is not allowed in the document instance because it does not
  appear in any accessible content model or it is completely excluded.
  The element is "SHORTTITLE".
-->
```

11. Appendix C - Detailed Raster Analysis

11.1 File D001R017

11.1.1 Output g42tiff/IslandPaint

12. Appendix D - Detailed CGM Analysis

12.1 File D001C001

12.1.1 Parser Log MetaCheck

MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 01/29/94 Time: 12:57:16

Metafile Examined : i:\94001\c001.cgm

Pictures Examined : All
Elements Examined : All
Bytes Examined : All

===== Trace Report =====

Tracing not selected.

===== CGM Conformance Violation Report =====

No Errors Detected

===== CALS CGM Profile (MIL-D-28003) Report =====

No profile discrepancies detected.

===== Conformance Summary Report =====

MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 01/29/94 Time: 12:57:26

Name of CGM under test: i:\94001\c001.cgm
Encoding : Binary

Pictures Examined : All
Elements Examined : All
Bytes Examined : All

BEGIN METAFILE string : >dme100<
METAFILE DESCRIPTION : >AUTO-TROL/REL-1.0 MIL-D-28003/BASIC-<
>1<

Picture 1 starts at octet offset 124: >dme100<

Conformance Summary : This file conforms to the CGM specification.
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested
3874 Elements Tested
57810 Octets Tested

```
=====
|   No Errors Were Detected   |
=====
```

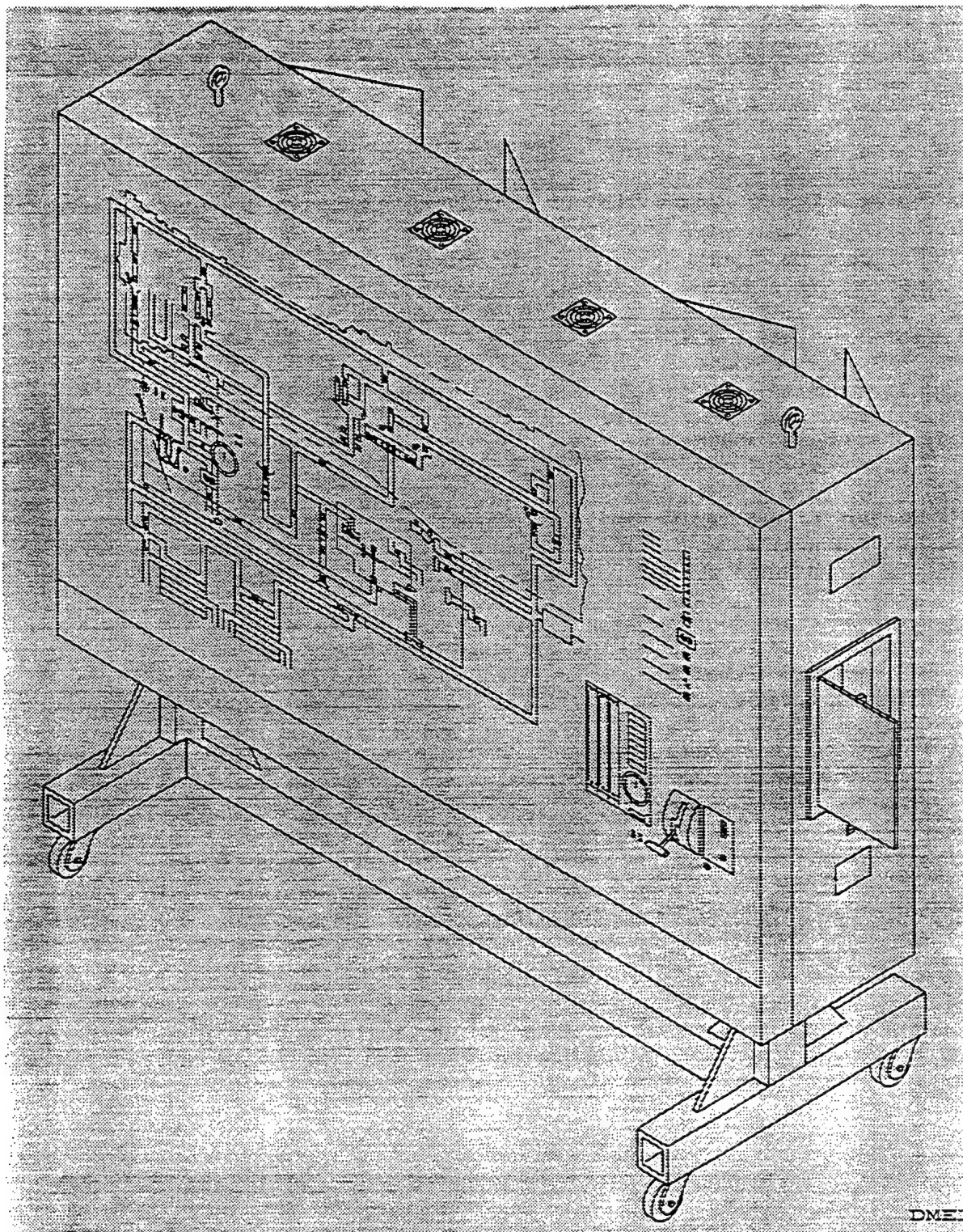
===== End of Conformance Report =====

12.1.2 validcgm Log

Analysis for file c001.cgm using table table

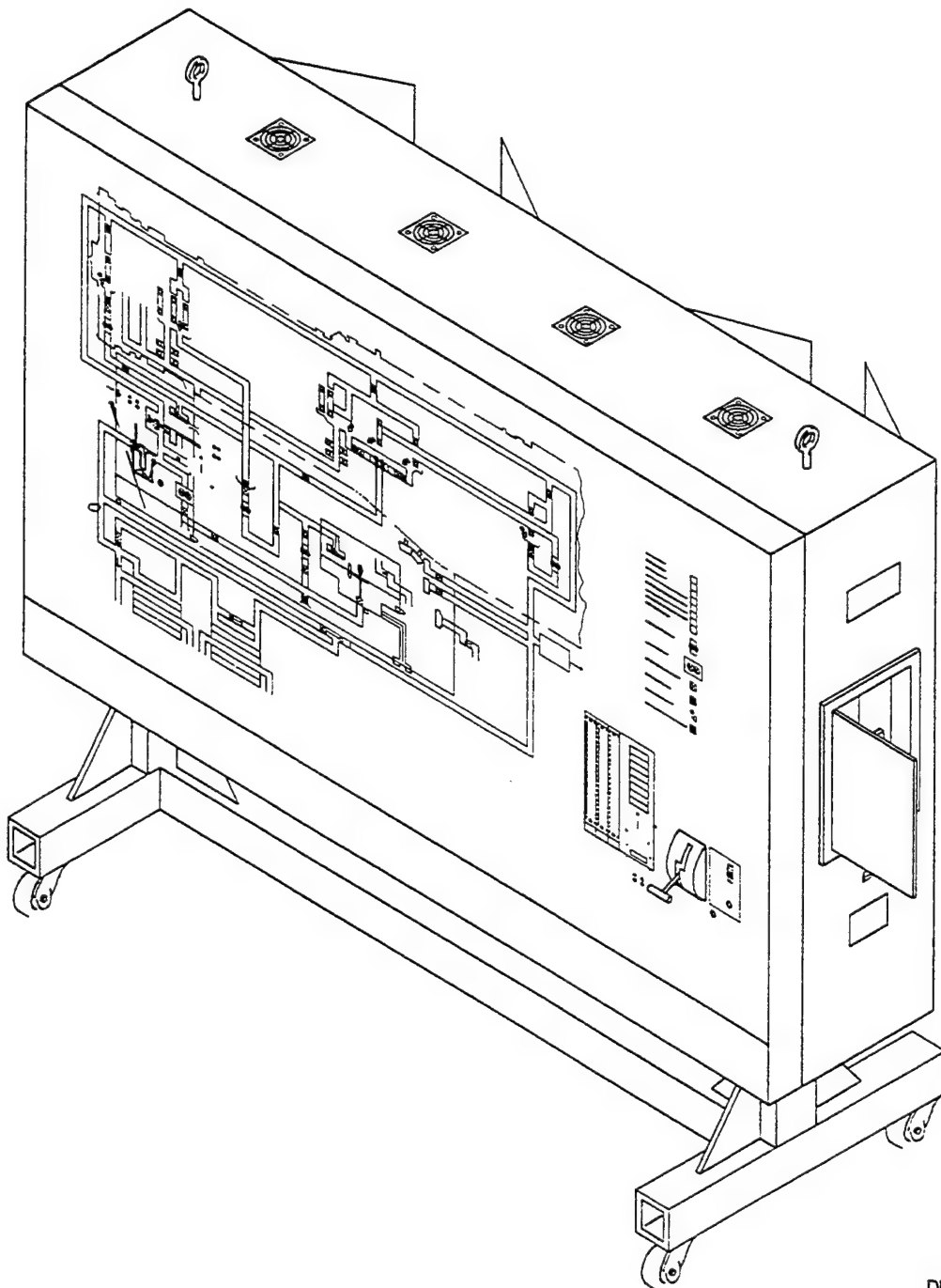
(0, 1) occurred 1 time
(0, 2) occurred 1 time
(0, 3) occurred 1 time
(0, 4) occurred 1 time
(0, 5) occurred 1 time
(1, 1) occurred 1 time
(1, 2) occurred 1 time
(1, 7) occurred 1 time
(1, 8) occurred 1 time
(1, 9) occurred 1 time
(1, 11) occurred 1 time
(1, 13) occurred 1 time
(2, 1) occurred 1 time
(2, 3) occurred 1 time
(2, 4) occurred 1 time
(2, 5) occurred 1 time
(2, 6) occurred 1 time
(2, 7) occurred 1 time
(4, 1) occurred 3785 times
(4, 4) occurred 1 time
(4, 15) occurred 4 times
(4, 17) occurred 12 times
(4, 18) occurred 3 times
(5, 3) occurred 14 times
(5, 4) occurred 5 times
(5, 10) occurred 1 time
(5, 14) occurred 1 time
(5, 15) occurred 1 time
(5, 16) occurred 1 time
(5, 18) occurred 1 time
(5, 22) occurred 1 time
(5, 23) occurred 1 time
(5, 28) occurred 2 times
(5, 29) occurred 2 times
(5, 30) occurred 1 time
(5, 34) occurred 20 times

12.1.3 Output Cadleaf



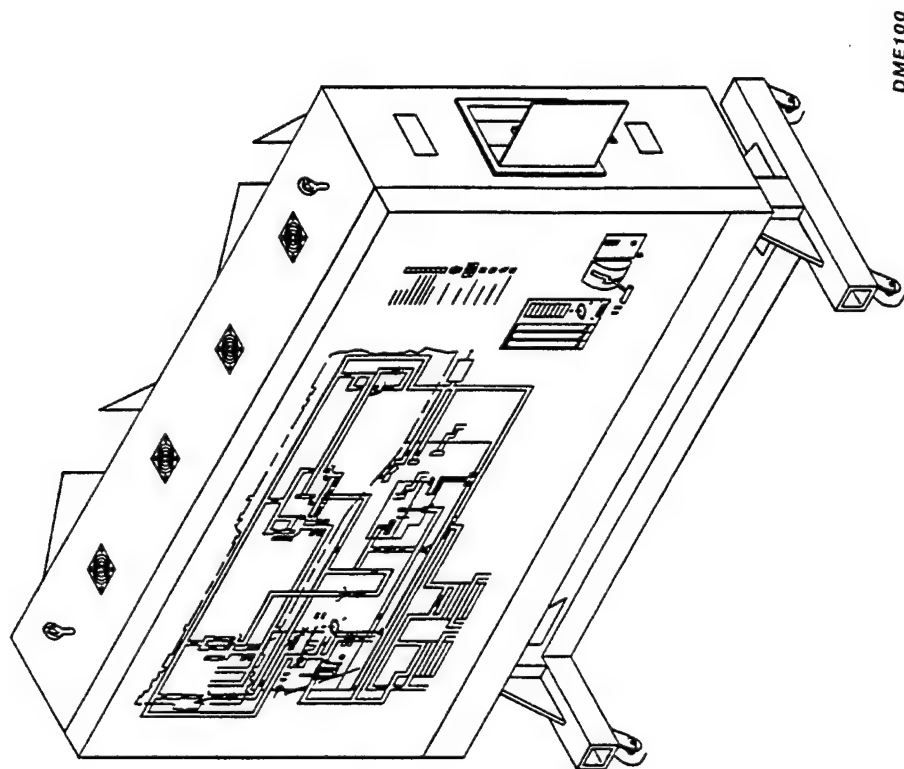
DMER

12.1.4 Output Designer

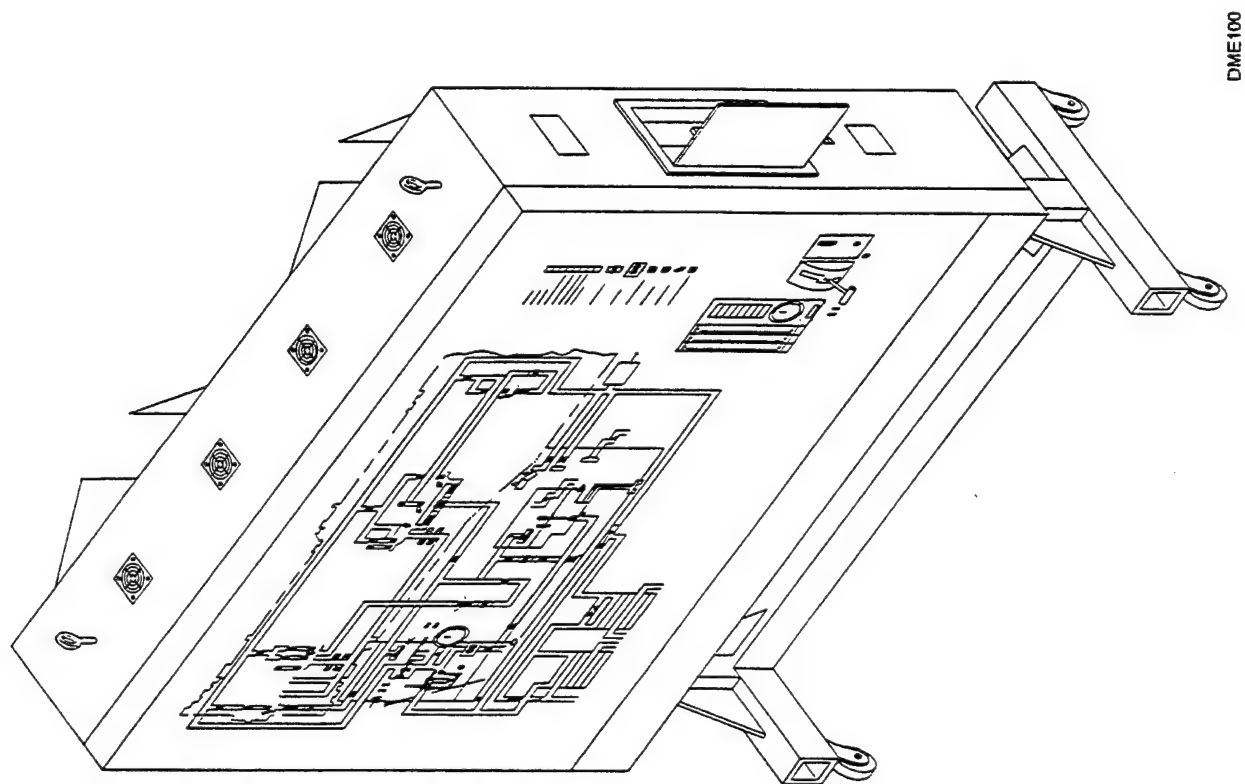


DME100

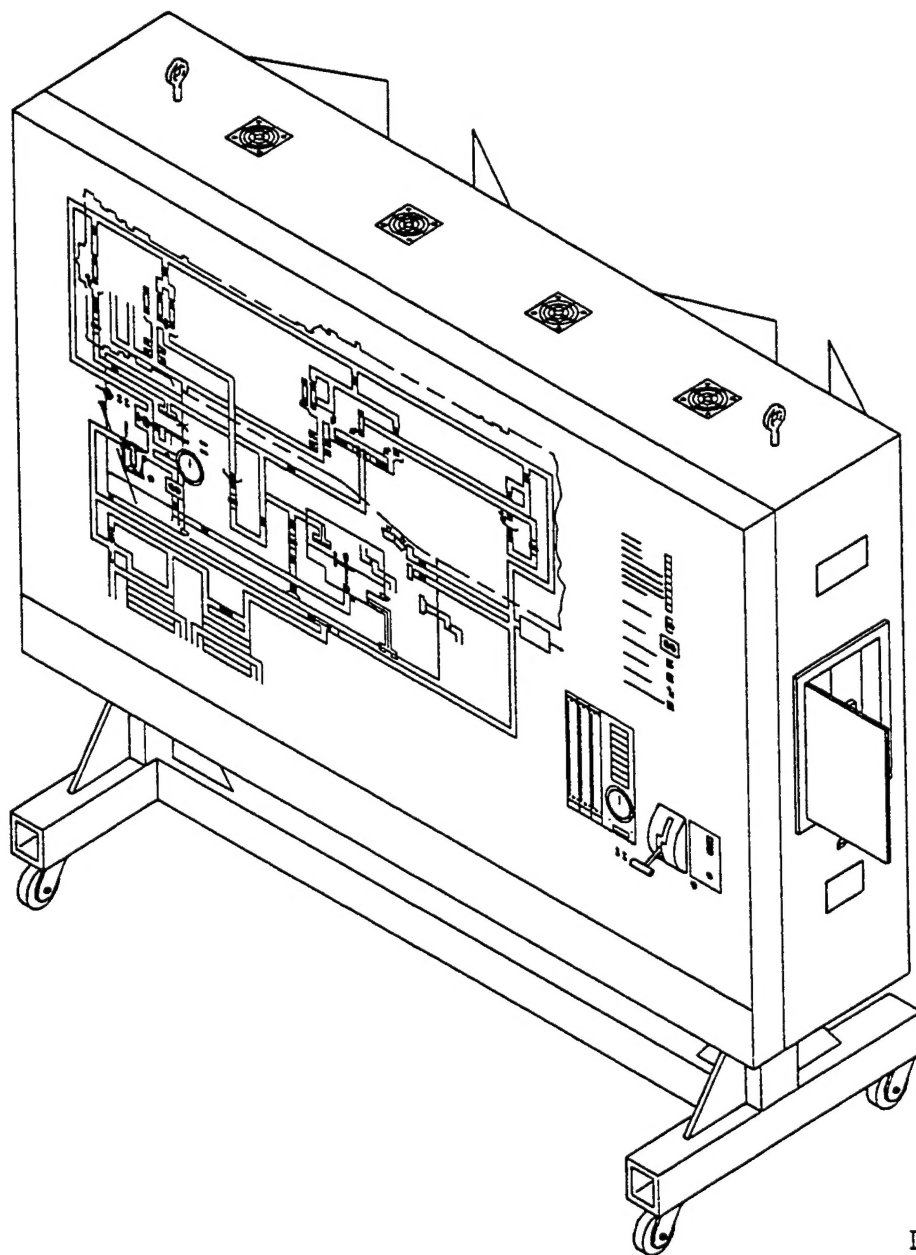
12.1.5 Output Harvard Graphics



12.1.6 Output HiJaak Pro

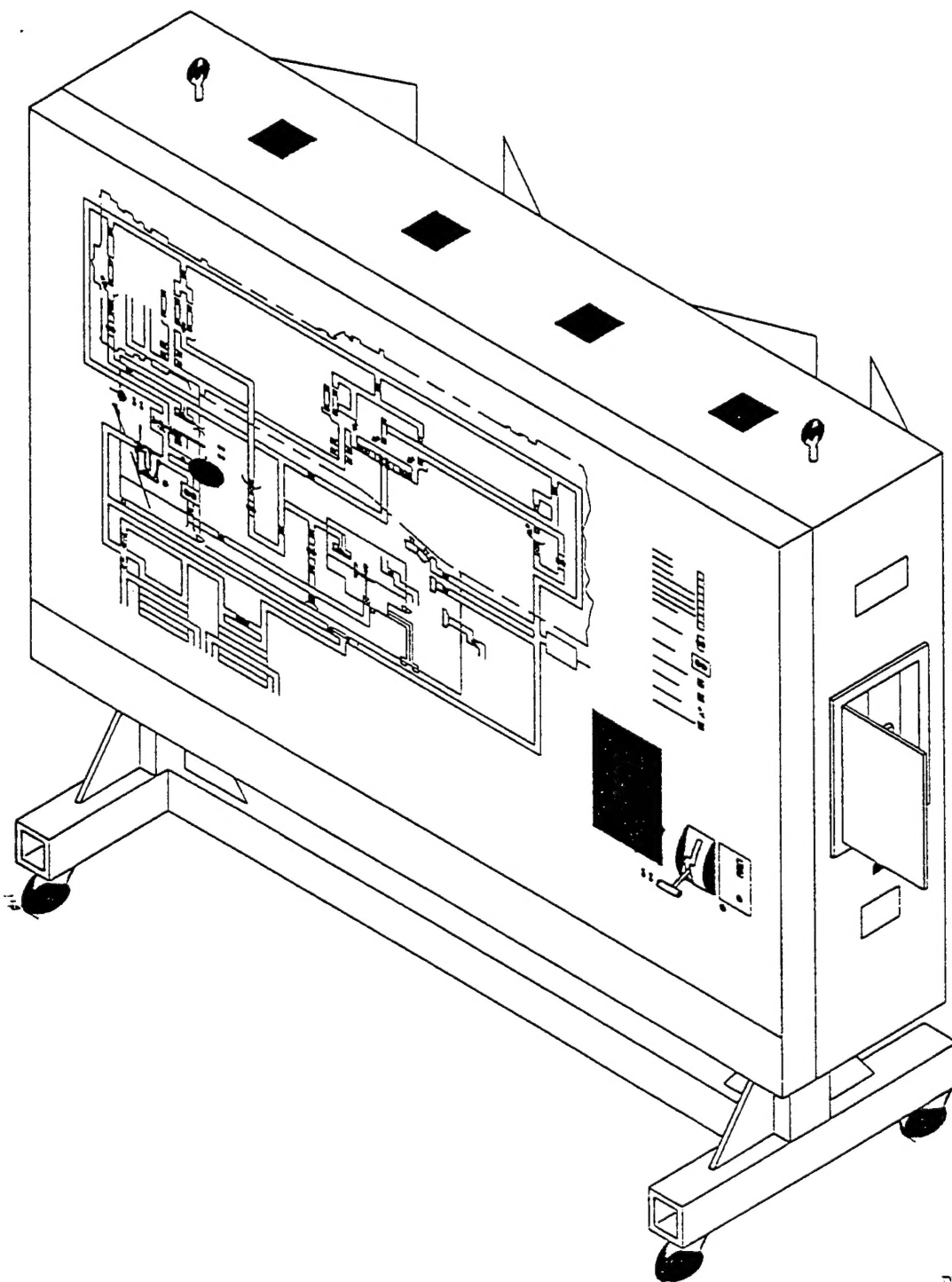


12.1.7 Output cgm2draw/IslandDraw



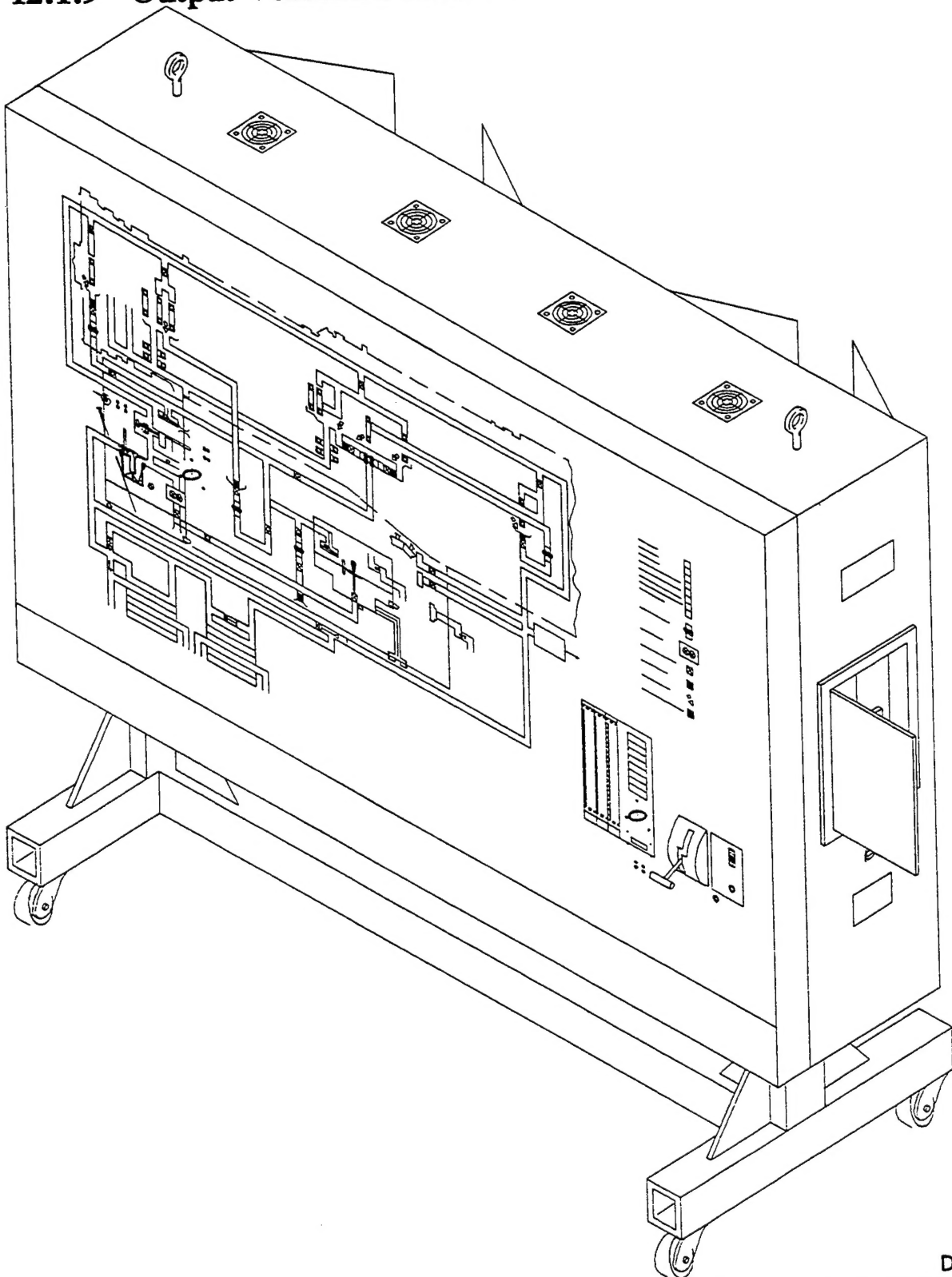
DME100

12.1.8 Output IslandDraw 4.0



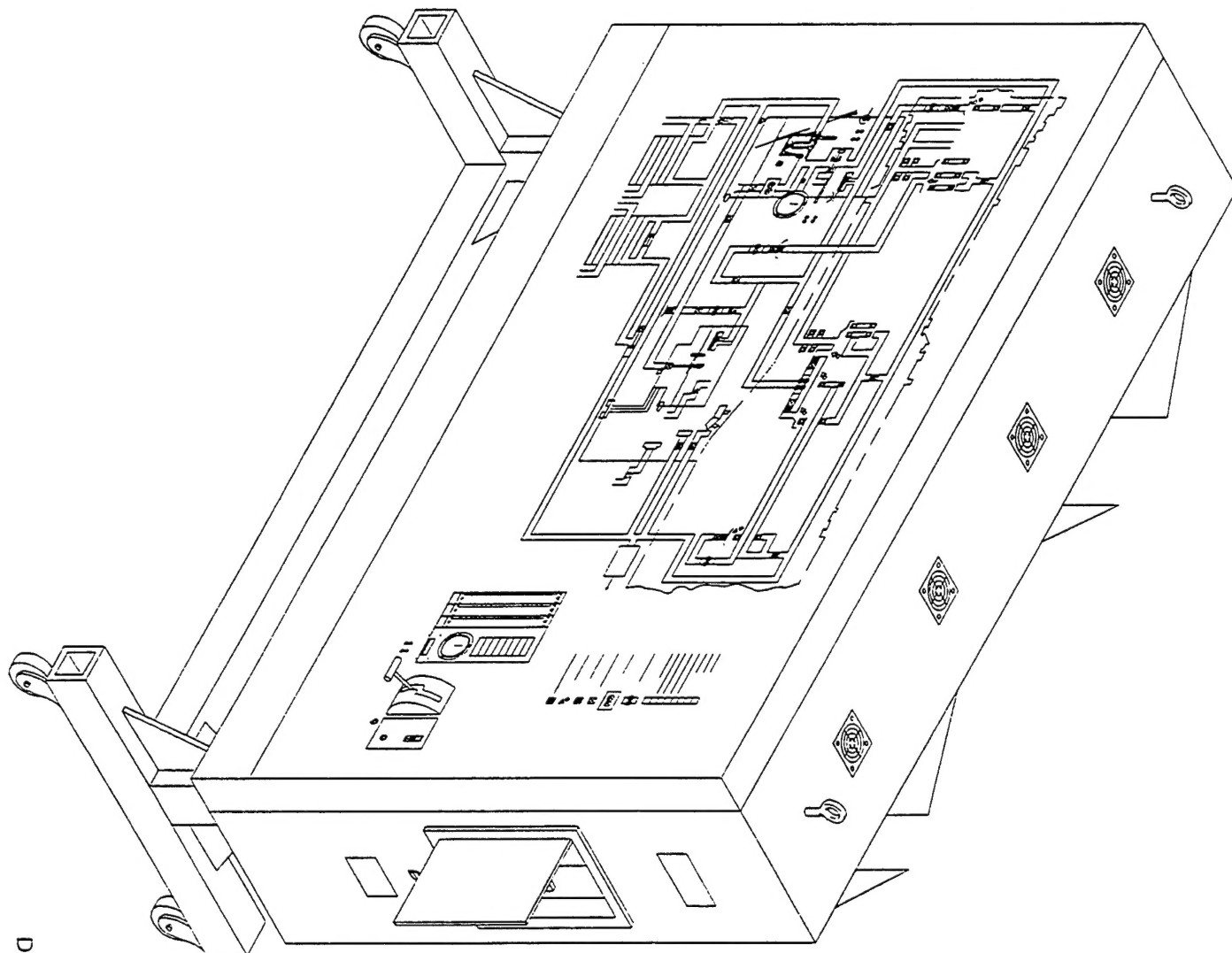
DW2101

12.1.9 Output Ventura Publisher



DME100

12.1.10 Output Freelance



DME100